in the market. Given the discrepancies between the decisions of the regulators and the payers, drug manufacturers are obliged to demonstrate a product's value to patients and payers, as well as to show that it is safe and efficacious to regulators. The incorporation of the payers' viewpoint in the development process will ease the gap between stakeholders.

PHP5

INCENTIVE-BASED INTERVENTIONS – REWARDING PATIENTS FOR GOOD BEHAVIOUR

Haynes S, Costello S, Brooks-Rooney C, Hamer N
Costello Medical Consulting Ltd, Cambridge, UK

OBJECTIVES: Incentive-based schemes, in which patients are rewarded for making behaviour changes or reaching treatment goals, are becoming more common in healthcare worldwide. Issues surrounding the cost effectiveness of behaviour change, as well as the ethical implications of rewarding members of society who exhibit inappropriate behaviours, are some of the issues which must be taken into account when considering these schemes in real-life. The aim of this study was to provide an account of incentive-based schemes currently under investigation, in an effort to determine where the perceived benefits of these schemes may lie for future implementation. **METHODS:** A Clinicaltrials.gov search was performed to identify trials that specifically tested the use of incentives in encouraging behaviour modification in target populations. **RESULTS:** A total of 76 clinical trials, predominantly based in North America, were identified as appropriate for analysis. The most commonly targeted groups included drug dependant individuals, overweight individuals (with exercise or weight-loss programmes) and smokers, implying that these schemes are most commonly used to induce lifestyle changes that promote health. Most trials looked at the clinical-effectiveness of incentives at achieving behaviour change, with minimal emphasis on the cost-effectiveness of adding the incentive. The majority of the trials (43/76, 57%) used monetary or voucher reimbursement systems as the incentive for patient behaviour modification, with 10 additional schemes providing the opportunity to win a prize. Only 1 scheme directly linked reimbursement to treatment costs by providing a cycle of treatment for free if the patient sustained compliance for a specified period. **CONCLUSIONS:** The scope for the use of incentive-based schemes is broad, with potential applications in numerous different diseases in which good compliance is required; not just those which require lifestyle change. However, further economic analysis of the cost-effectiveness of such schemes is essential before they are implemented more widely.

Health Care Use & Policy Studies – Diagnosis Related Group

PHP6

EXPLORE THE USE OF DRUGS IN MEDICAL INSURANCE BILLING IN CHINA

Tan Z
Ministry of Labor and Social Security, Beijing, China

OBJECTIVES: With the advancement of the China health care reform and the increasing health care expenditure, it is imperative to explore other billing methods in addition to the existing item-based billing. Since 1980s, US and many other countries have adopted DRGs to manage heath care insurance to control health care expenditure and achieved positive outcomes. The objectives of this study are to understand experiences from other countries in the implementation of DRGs and make recommendations on how to adopt DRGs in China. **METHODS:** This study started in 2003. It is composed of three phases: phase one is to study how DRGs are implemented in the US, Australia, and Germany; phase two, the core part of this study, is to analyze the grouping method. Based on learnings from US, Australia, and Germany, we randomly collected 700000 patient records taking place between 2002 and 2005 from 12 tier-one Beijing hospitals, developed a theoretical DRGs grouping model, and completed over 600 DRGs automated grouping programs tailored for China; phase three contains analyses on the basic requirement of relevant policy and technology support to implement DRGs. **RESULTS:** DRGs has been demonstrated to be an effective approach to manage health care insurance in many countries. Considering China's special situations (population, health insurance system and policy environment), we developed and piloted DRGs in 12 tier-one hospitals in Beijing in 2010. We will further evaluate the impact of this program in the future. **CONCLUSIONS:** The successful implementation of DRGs depends on an appropriate policy environment and mature technology support. Currently China is not ready to launch DRGs nationally yet due to the lack of policy environment and technology support.

Health Care Use & Policy Studies – Drug/Device/Diagnostic Use & Policy

PHP7

DEVELOPING PUBLIC HEALTH GUIDANCE - WHAT ARE THE DATA GAPS? REVIEW OF THE GAPS IN THE EVIDENCE IDENTIFIED BY NICE IN THE UNITED KINGDOM

Kusel J, Costello S, Hamer N, Roper S, Hamerslag L
Costello Medical Consulting Ltd, Cambridge, UK

OBJECTIVES: Public health policy is understood to be a major determinant of overall population health. However, developing public health guidance can be difficult due to the lack of sufficient evidence on the effectiveness and cost-effectiveness of possible interventions. The objective of this study was to identify the major gaps in the evidence base that has been used to develop public health guidance. **METHODS:** The gaps identified by the UK National Institute for Health and Clinical Excellence (NICE) in the evidence that was used for the development of their 31 public health guidance documents published as of December 2010 were assessed and compared. **RESULTS:** The most prevalent data gap, identified by 25 of the 31 guidance documents, was a lack of evidence on the effectiveness of public health interventions in specific subgroups of the population, particularly ethnic minorities, age subgroups and those from disadvantaged backgrounds. The second major gap in the evidence, discussed by 21 documents, was a lack of data specific to the country of interest (in this case, the UK). Nineteen documents reported the lack of cost-effectiveness evidence as a barrier to developing public health guidance and 4 of these specifically noted the difficulty of generating QALYs in the public health arena. Further major data gaps included a lack of well-designed studies (14 documents), a lack of long-term outcomes (13), insufficient evaluation of which elements of an intervention make it effective (9) and a lack of evidence on the relative effectiveness of interventions (8). **CONCLUSIONS:** Research into public health interventions and issues is of paramount importance. Researchers should focus efforts upon identifying particular subgroups in which interventions are particularly effective or ineffective and on generating country-specific data. Cost-effectiveness data is particularly lacking; one solution would be to devise new methods of QALY measurement in public health situations.

PHP8

PHYSICIAN SHORTAGE IMPACT ON PATIENT RX USE FOR SELECT CHRONIC CONDITIONS

Dall T[1], Seiders M[2], Price P[2], Chakrabarti R[1], Tal S[1], Kowal S[1], Larson J[1]
[1]*IHS, Washington, DC, USA,* [2]*AstraZeneca Pharmaceuticals LP, Wilmington, DE, USA*

OBJECTIVES: This study investigates the extent to which geographic variation in adequacy of primary care and specialist supply explains variation in patient use of prescribed medications to treat chronic conditions. **METHODS:** Generalized Least Squares regression with period random effects was used on a pooled data set of monthly (May 2006 to Oct 2010) IMS Health data for 360 Metropolitan Statistical Areas (MSAs). The dependent variable was total monthly prescriptions per MSA for: (1) Statins, (2) PPIs, (3) Anti-psych, and (4) asthma/COPD. Separate regressions were estimated by therapeutic category and by payer type. Explanatory variables include monthly: (1) size of the population with the chronic condition;(2) economic environment; (3) dummy event variables; and (4) level of Rx advertising. Estimates of the shortfall of primary care providers and specialists in each State in 2010 are included as explanatory variables. For state-level shortfall, provider demand estimates were based on national healthcare use and delivery patterns applied to each State's population controlling for demographics, rates of uninsured, and obesity rates. **RESULTS:** There exists a direct correlation between estimated adequacy of primary care and specialist (cardiologist, gastroenterologist, psychiatrist, pulmonologist, and allergist) supply and volume of prescriptions. The patterns are relatively consistent across therapeutic areas. For the Statin market, each 1% shortfall of cardiologists is associated with 0.36%, 0.43%, and 0.79% decrease in Statin Rx volume for the commercially insured, Medicare, and Medicaid populations, respectively. Each 1% shortfall of primary care providers is associated with decreases in volume across in the commercially insured (0.15%) and Medicaid (0.83%) populations. **CONCLUSIONS:** This research suggests that controlling for economic and population risk factors, greater inadequacy of physician supply is associated with lower use of prescriptions for treating chronic conditions. Physician shortages disproportionally affect access to medications for the Medicaid population, followed by the Medicare and commercially insured populations.

PHP9

IMPACT OF FREE PRESCRIPTIONS IN WALES ON PRESCRIBING - A THIN DATABASE STUDY

Thompson M, Sedani T, Blak BT, Hards M
Cegedim Strategic Data Medical Research Ltd, London, UK

OBJECTIVES: The Welsh Assembly Government introduced free prescriptions for all on 1st April 2007. In the other UK countries, prescriptions were around £6 each, although children, elderly and other exemptions applied. This study evaluated whether the Welsh policy change impacted levels of prescribing. **METHODS:** Total numbers of prescription items were calculated for eight 12-month periods between 1st July 2001 and 30th June 2009 from The Health Improvement Network (THIN), which contains anonymised longitudinal UK primary care data. The number of prescriptions was divided by number of actively registered patients for each time period, country and age category (0-21, 22-59 and ≥60 years old). Percentage changes between periods were calculated and all results described. **RESULTS:** In Wales there were 19.5 prescriptions/patient in the 2001/2002 period, which steadily increased to 26.9 in the 2008/2009 period. In England, prescriptions/patient increased from 15.1 to 21.3, Scotland 15.4 to 20.2, Northern Ireland (NI) 16.7 to 21.9. The percentage change between 2006/2007 and 2007/2008 was 4.2% in Wales, 4.9% England, 3.1% Scotland, 4.3% NI. The change within the 0-21 year olds was 4.0%, 1.7%, 2.6% and 0.8% respectively. For 22-59 year olds it was 6.6%, 3.0%, 2.5% and 3.7% respectively. For ≥60 year olds it was 2.8%, 5.1%, 2.9% and 4.3% respectively. **CONCLUSIONS:** The descriptive results suggest that overall the policy change did not seem to impact levels of prescribing in Wales as the percentage change was similar across countries. However, the percentage change for the 0-21 and 22-59 age groups was higher in Wales, whereas the percentage change for the ≥60 age group, who were already exempt from prescription charges, was lower. This could suggest that prescribing increased for patients who were previously most affected by prescription charges. Future studies could evaluate whether prescribing of certain drug classes, especially those including over-the-counter products, was affected.

PHP10

THE TEMPORAL ASSOCIATION BETWEEN PRESCRIBED OPIOIDS AND THE NATIONAL DEATH RATE DUE TO OPIOID POISONING

Gokhale MN, Martin B
University of Arkansas for Medical Sciences, Little Rock, AR, USA